

US 20140098085A1

(19) United States

(12) Patent Application Publication Lee et al.

(10) **Pub. No.: US 2014/0098085 A1**(43) **Pub. Date: Apr. 10, 2014**

(54) TRANSPARENT DISPLAY DEVICE

(71) Applicant: MICROSOFT CORPORATION,

Redmond, WA (US)

(72) Inventors: Jinha Lee, Seoul (KR); Catherine N.

Boulanger, Redmond, WA (US); Steven Nabil Bathiche, Kirkland, WA (US)

(73) Assignee: MICROSOFT CORPORATION,

Redmond, WA (US)

(21) Appl. No.: 13/647,507

(22) Filed: Oct. 9, 2012

Publication Classification

(51) Int. Cl. G06F 3/01 (2006.01) G06T 15/00 (2011.01) G06F 3/033 (2006.01) (52) **U.S. Cl.** USPC **345/419**; 345/156; 345/163

(57) ABSTRACT

This document describes techniques and apparatuses for implementing a transparent display device. A transparent display device includes a transparent or translucent screen to render images on the screen, and to render virtual objects that appear to be in a three-dimensional (3D) space behind the screen. The transparent display device also includes a hand tracker to sense movement of a user's hands to interact with one or more of the virtual objects, and to generate 3D-input based on the movement. The transparent or translucent screen enables the user to see the user's hands behind the screen as the user's hands interact with the one or more virtual objects. The transparent display device is controlled to modify the rendering of the images on the screen or the virtual objects behind the screen based on the 3D-input.



